## CLAIMS

 A thin film capacitor for reducing power source noise connected to a power source for reducing power source noise, characterized in that

said capacitor has a dielectric thin film,

said dielectric thin film is comprised of a bismuth layer structured compound wherein the c axis is oriented substantially vertically with respect to the plane of a thin film forming substrate, and

said bismuth layer structured compound is expressed by the formula  $(Bi_2O_2)^{2+}(A_{m-1}B_mO_{3m+1})^{2-}$  or  $Bi_2A_{m-1}B_mO_{3m+3}$ , where the symbol m in said formula is a positive number, the symbol A is at least one element selected from Na, K, Pb, Ba, Sr, Ca, and Bi, and the symbol B is at least one element selected from Fe, Co, Cr, Ga, Ti, Nb, Ta, Sb, V, Mo, and W.

- 2. The thin film capacitor for reducing power source noise as set forth in claim 1, wherein said capacitor is a decoupling capacitor connected in parallel between the power source and an integrated circuit.
- 3. The thin film capacitor for reducing power source noise as set forth in claim 1, wherein said capacitor is a bypass capacitor connected in parallel between the power source and an integrated circuit.
- 4. The thin film capacitor for reducing power source noise as set forth in claim 2 or 3, wherein said capacitor is arranged near an integrated circuit chip.
- 5. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is arranged in contact with an integrated circuit chip.
- 6. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is arranged between an integrated circuit chip and a circuit board.
- 7. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is mounted buried in a recess of a circuit board.

- 8. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is mounted on the surface of a circuit board.
- 9. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is formed integrally inside a circuit board.
- 10. The thin film capacitor for reducing power source noise as set forth in any one of claims 2 to 4, wherein said capacitor is arranged at an inside or surface of a connection socket.
- 11. The thin film capacitor for reducing power source noise as set forth in any one of claims 1 to 10, wherein said capacitor has a lower electrode formed on said thin film forming substrate, said dielectric thin film formed on said lower electrode, and an upper electrode formed on said dielectric thin film.
- 12. The thin film capacitor for reducing power source noise as set forth in any one of claims 1 to 10, wherein said capacitor has a multilayer structure comprised of a plurality of said dielectric films stacked via electrodes.
- 13. The thin film capacitor for reducing power source noise as set forth in any one of claims 1 to 10, wherein said capacitor is comprised of a bismuth layer structured compound having a c axis orientation of at least 80%.